

IQ2 CONFIGURATION TOOL FOR SIERRA WIRELESS GATEWAY USER GUIDE



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Change Log:

Date	Author	Change	Version Number
March 2021	Matt Crites	Initial draft	1.0

Section 1.0: Overview

1.1: OVERVIEW

The following guide is a walkthrough of the processes and procedures to setup a Sierra Cellular Gateway to collect and publish PLC data and send to iQ2. The process requires installing the LEC iQ2 Configuration Tool onto your Windows PC. This tool will be used to set up the needed tags, set update intervals, and building the needed package to upload onto the Sierra gateway.

1.2: SUPPORT INFORMATION

Client requests for LEC product support, resources, and personnel will require the submission and assignment of a formal ticket via [solveIT](#) in order to initiate any and all support activities.

In order to initiate a support ticket in LEC's [solveIT](#) system, please visit the link below, and click "new support ticket" to complete the online ticket submission form.

[solveIT Ticket Submission: https://solveit.lecinc.com/support/home](https://solveit.lecinc.com/support/home)

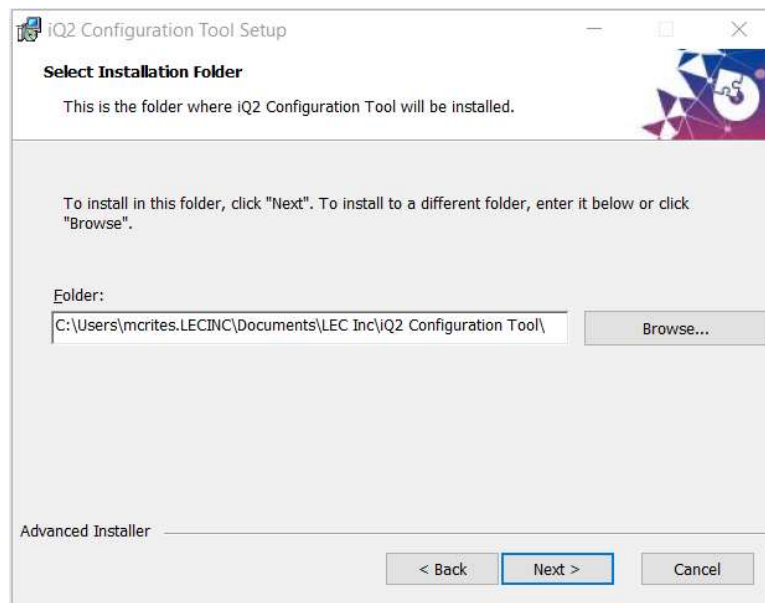
Section 2.0: The iQ2 Configuration Tool

2.1: INSTALLATION

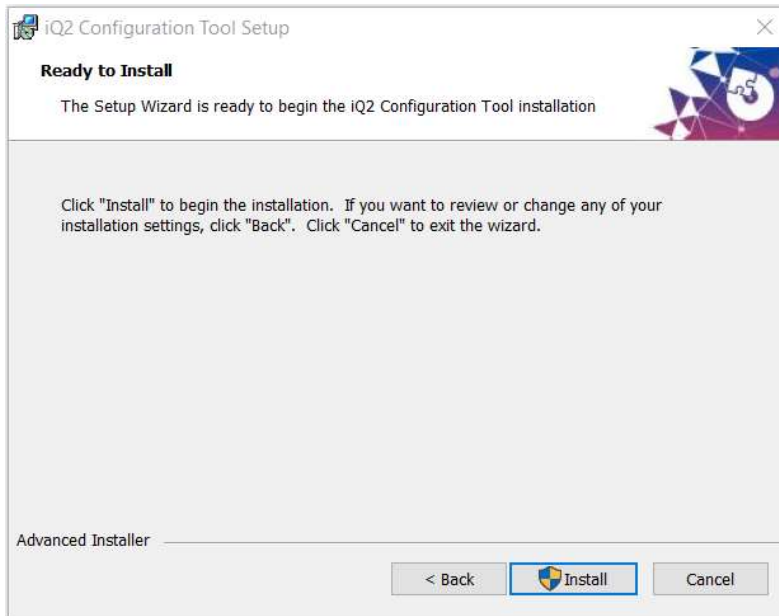
1. Download the iQ2 Configuration Tool zip file from the below link:
 - a. <https://lecinc.freshdesk.com/support/home>
2. Unzip the iQ2 Configuration Tool onto desktop
3. Double click to open the iQ2 Configuration Tool folder
4. Double click the iQ2 Configuration Tool Windows Installer
5. The Setup Wizard will start. Click **Next** to begin



6. Choose the folder to store the configuration packages and click **Next**



- Next, click **Install** to install the application



- The iQ2 Configuration Tool will begin installation. When complete, click **Finish** to close the installation wizard.

2.2: USING THE IQ2 CONFIGURATION TOOL

- Double click the iQ2 Configuration Tool icon on your PC desktop, if the application is not already open.



- The iQ2 Configuration Tool will open

3. The tool is setup with various field boxes and dropdowns to setup and build your tag table based on the protocol chosen from the Protocol dropdown. Begin by entering the following:
 - a. **Interval:** Set the update interval time, in seconds, for how often to send fresh data to iQ2 (Default is 60 seconds)
 - b. **MBid:** Set the Modbus ID for the iQ2 Client (Default is 1)
 - c. **MBport:** Enter the Modbus Port to use (Default is 502)
4. **The following fields are related to Modbus TCP:**
 - a. **Protocol:** Select from the dropdown the desired protocol: ModbusTCP
 - b. **Type:** Select the Register Type from the dropdown to be polled
 - c. **Cloud Name:** Enter the CloudName for this tag. The CloudName is how iQ2 associates registers in the portal. For example, for ModbusTCP, the Cloud Name will be Type and Register selected, i.e. AI100.
 - d. **Register:** Enter the register number to be polled
 - e. **MB IP Address:** Enter the IP address of the device to be polled
 - f. **Deadband:** Enter the desired deadband (Default is disabled)

NOTE: When a deadband is set, the iQ2 client will monitor for changes based on that threshold and update iQ2, if required. For example, if an analog deadband is set for 20 and a data point changes by that amount plus or minus in between scheduled intervals, the client will send that update to iQ2 upon detection however, if the deadband is set to “disabled”, the data point can change numerous times between update cycles but iQ2 will only get the update from the last change at the moment of the next interval cycle.

- g. When all fields are entered, Click Add

iQ2_Configurator

Windows

Interval: 60 SET MBid: 1 SET MBport: 502 SET

Protocol: Modbus TCP

Type:

Cloud Name: AI100 Register: 100 MB IP Address: 192.168.13.100 SET

Deadband: 20 ☐ Bitpacked

Open Sierra Package

Add Delete Create Sierra Package Select Record

No.	Cloud Name	Protocol	Register	Type	Tag Name	Bit	Special	EIP IP Address	EIP Path	Deadband
1	AI100	Modbus TCP	100	AI						20

iQ

5. The following fields are related to EIP 500:

- Protocol:** Select from the dropdown the desired protocol: EIP 500
- Type:** Select the desired Type
- CloudName:** Enter the CloudName for this tag. For EthernetIP, the Cloud Name can be any register number but must be associated based on the below:
 - EIP 500:**
 - INT → AI
 - REAL → FI

For example, for an INT tag, the CloudName could be AI100.
- Tag:** Enter the Tag Name that is to be polled from the PLC
- EIP IP Address:** Enter the IP Address of the PLC
- Deadband:** Enter the desired deadband for this tag
- When all fields are entered, click **Add**

No.	Cloud Name	Protocol	Register	Type	Tag Name	Bit	Special	EIP IP Address	EIP Path	Deadband
1	AI100	EIP 500 CPU		INT	CloudPB			192.168.13.100		20

6. The following fields are related to EIP 5k:

- a. **Protocol:** Select from the dropdown the desired protocol: EIP 5k
- b. **Type:** Select the desired Type
- c. **CloudName:** Enter the CloudName for this tag. For EthernetIP, the Cloud Name can be any register number but must be associated based on the below:
 - i. **EIP 5k:**
 1. BOOL_5k → DI
 2. INT_5k → AI
 3. DINT_5k → LI
 4. REAL_5k → FI

For example, EIP5k BOOL_5k is selected, the Cloud Name can be DI100.
- d. **Tag:** Enter the Tag Name that is to be polled from the PLC
- e. **EIP IP Address:** Enter the IP Address of the PLC
- f. **EIP Path:** Enter the correct path for the PLC. Default is typically 1,0
- g. **Deadband:** Enter the desired deadband for this tag
- h. When all fields are entered, click **Add**

iQ2_Configurator

Windows

Interval: 60 **SET** MBid: 1 **SET** MBport: 502 **SET**

Protocol: EIP 5K CPU

Type:

Cloud Name: DI100 Tag: ButtonCounter EIP IP Address: 192.168.13.100 EIP Path: 1,0

Deadband: 20 ☐ Bitpacked

Open Sierra Package

Add **Delete** **Create Sierra Package** **Select Record**

No.	Cloud Name	Protocol	Register	Type	Tag Name	Bit	Special	EIP IP Address	EIP Path	Deadband
1	DI100	EIP 5K CPU		BOOL_5K	ButtonCounter			192.168.13.100	1,0	20

iQ2

2.3: BUILDING SIERRA PACKAGE

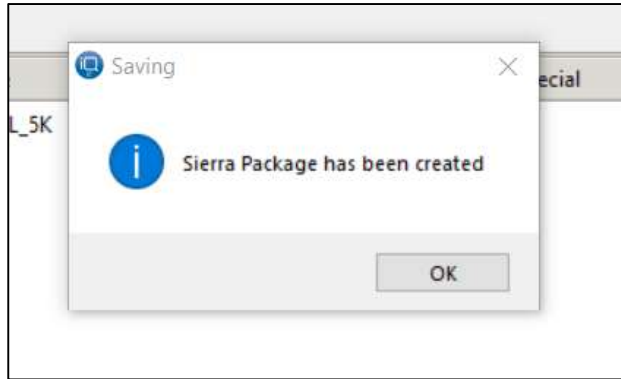
1. Once the tag table is complete, click **Create Sierra Package**

Open Sierra Package

Add **Delete** **Create Sierra Package** **Select Record**

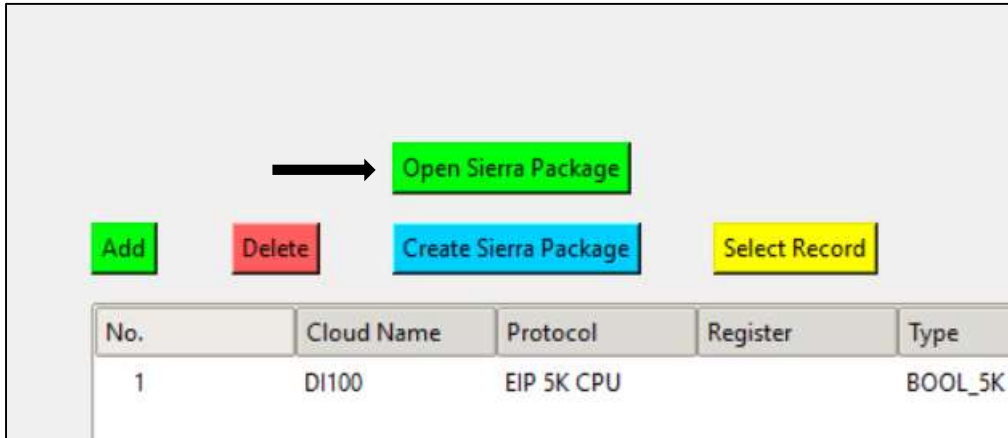
No.	Cloud Name	Protocol	Register	Type
1	DI100	EIP 5K CPU		BOOL_5K

2. The default storage location that was set up during the install process will open
3. Enter the desired name into the **File Name** field and Click **Save**
4. When complete, a window will pop up stating the package has been created. Click **OK**



2.4: EDITING A SIERRA PACKAGE

1. Click **Open Sierra Package**



2. The default storage location that was set up during the install process will open
3. Select the Sierra Package to Edit and click **Open**
4. Make the necessary edits. When done, click **Create Sierra Package** to create the new package as done in the previous section.

2.5: EDITING A TAG

1. In the tag table, select the Row to be edited and click **Select Record**

Open Sierra Package

Add Delete Create Sierra Package Select Record

No.	Cloud Name	Protocol	Register	Type	Tag Name	Bit	Special	EIP IP Address	EIP Path	Deadband
1	AI100	Modbus TCP	100	AI						disabled
2	DO100	Modbus TCP	100	DO						disabled
3	AO100	Modbus TCP	100	AO						disabled
4	DI100	Modbus TCP	100	DI						disabled

- The fields at the top of the Configuration Tool will fill with the information from the chosen record.
- Edit the necessary fields and then click **Update Record**

Open Sierra Package

Delete Create Sierra Package Select Record Update Record

	Cloud Name	Protocol	Register	Type	Tag Name	Bit	Special	EIP IP Address
	AI100	Modbus TCP	100	AI				
	DO100	Modbus TCP	100	DO				
	AO100	Modbus TCP	100	AO				
	DI100	Modbus TCP	100	DI				

- The updated record will move from its current position in the tag table to the last row in the tag table.

2.5: DELETING A TAG

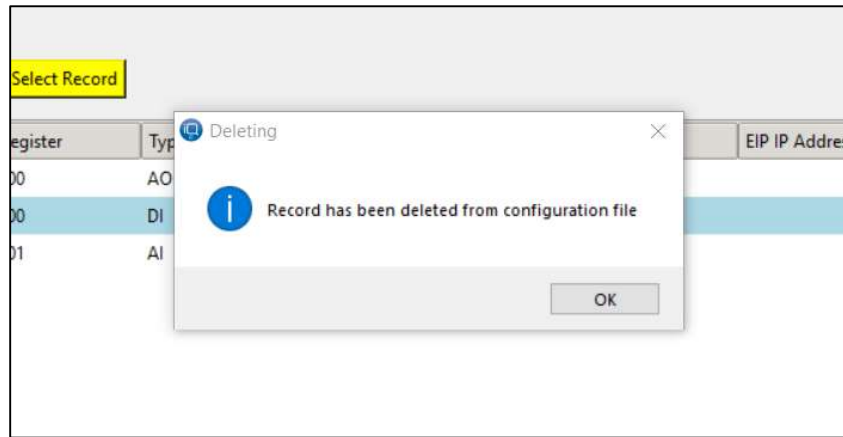
- In the tag table, select the Row to be edited and click **Delete**

Open Sierra Package

Add Delete Create Sierra Package Select Record

No.	Cloud Name	Protocol	Register	Type	Tag Name	Bit	Spec
1	DO100	Modbus TCP	100	DO			
2	AO100	Modbus TCP	100	AO			
3	DI100	Modbus TCP	100	DI			
4	AI100	Modbus TCP	101	AI			

2. The Tool will indicate that the record as been deleted from the Configuration File. Click **OK**

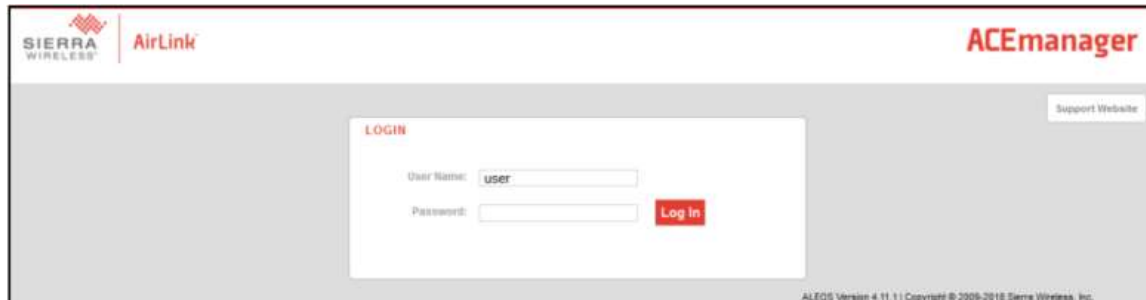


Section 3.0: The Sierra Gateway

SECTION 3.1: LOGGING IN

This section will be installing the iQ2 package onto the Sierra Gateway. This section will assume that all communication is being done via a local Ethernet connection and username and passwords are still set to defaults. This section also assumes setup for installing applications has already been enabled. See Section 3.3 of this guide to enable.

1. Go to the following address to log into the Sierra Gateway (local or remote)
 - a. <http://192.168.13.31:9191> (Local Default Ethernet Connection)
 - b. <https://192.168.13.31:9443>
2. Enter the following:
 - a. User: user
 - b. 12345



SECTION 3.2: UPLOADING THE IQ2 SIERRA PACKAGE

1. Go to **Applications – ALEOS Application Framework**



ALEOS Application Framework

CPU Load (last 15 minutes) 0.010000

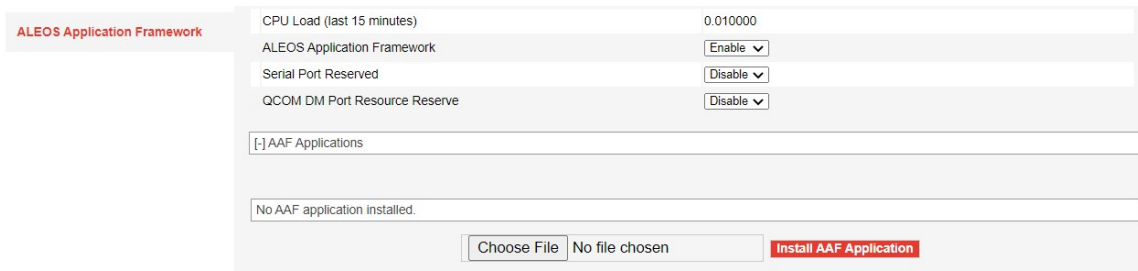
ALEOS Application Framework Enable

Serial Port Reserved Disable

QCOM DM Port Resource Reserve Disable

[+] AAF Applications

2. Expand the AAF Applications Section



ALEOS Application Framework

CPU Load (last 15 minutes) 0.010000

ALEOS Application Framework Enable

Serial Port Reserved Disable

QCOM DM Port Resource Reserve Disable

[-] AAF Applications

No AAF application installed.

Choose File No file chosen Install AAF Application

- Click Choose File. Choose the desired iQ2 Configuration Package and Click Open.
- Click Install AAF Application to install the package
- When complete, the Application Fields should populate. Ensure the Status field says “started”. If it says “stopped”, the application is not running. Contact LEC support for assistance.



ALEOS Application Framework

CPU Load (last 15 minutes) 0.040000

ALEOS Application Framework Enable

Serial Port Reserved Disable

QCOM DM Port Resource Reserve Disable

[-] AAF Applications

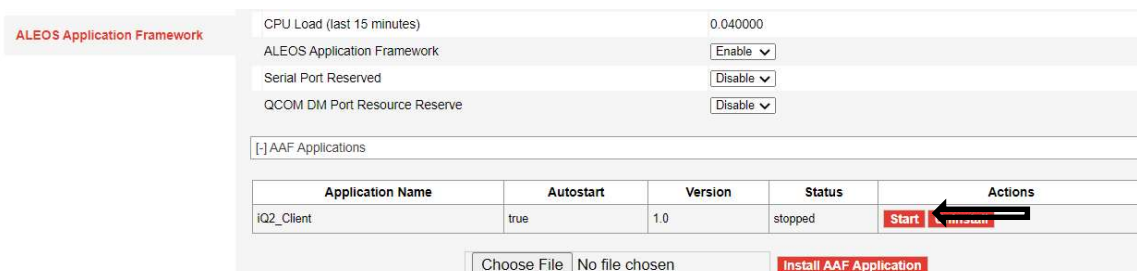
Application Name	Autostart	Version	Status	Actions
iQ2_Client	true	1.0	started	Stop Uninstall

Choose File No file chosen Install AAF Application

- The iQ2 package is now running. Data should be populating in the iQ2 portal.

SECTION 3.3: RESTARTING THE IQ2 APPLICATION

- To restart the iQ2 application, click Stop then Start under the Actions field. The status field will show “stopped”.



ALEOS Application Framework

CPU Load (last 15 minutes) 0.040000

ALEOS Application Framework Enable

Serial Port Reserved Disable

QCOM DM Port Resource Reserve Disable

[-] AAF Applications

Application Name	Autostart	Version	Status	Actions
iQ2_Client	true	1.0	stopped	Start Stop Uninstall

Choose File No file chosen Install AAF Application

- To restart the iQ2 application, click Start. The status window will show “started”

ALEOS Application Framework

CPU Load (last 15 minutes) 0.040000

ALEOS Application Framework Enable ▾

Serial Port Reserved Disable ▾

QCOM DM Port Resource Reserve Disable ▾

[+] AAF Applications

Application Name	Autostart	Version	Status	Actions
iQ2_Client	true	1.0	started	Stop Start

Choose File No file chosen Install AAF Application

- The iQ application should now have restarted.

SECTION 3.4: UNINSTALLING AN IQ2 SIERRA PACKAGE

- If you ever need to uninstall a previously installed package, simply click Uninstall on the ALEOS Application Framework page.

ALEOS Application Framework

CPU Load (last 15 minutes) 0.040000

ALEOS Application Framework Enable ▾

Serial Port Reserved Disable ▾

QCOM DM Port Resource Reserve Disable ▾

[+] AAF Applications

Application Name	Autostart	Version	Status	Actions
iQ2_Client	true	1.0	started	Stop Uninstall

Choose File No file chosen Install AAF Application

- Once complete, the application will no longer be installed on the Sierra gateway.

SECTION 3.5: ENABLING ALEOS APPLICATION FRAMEWORK

- Go to **Applications – ALEOS Application Framework**

ALEOS Application Framework

CPU Load (last 15 minutes) 0.070000

ALEOS Application Framework Disable ▾

Serial Port Reserved Disable ▾

QCOM DM Port Resource Reserve Disable ▾

[+] AAF Applications



2. Set the ALEOS Application Framework dropdown from **Disabled** to **Enabled** then select Apply. The Sierra gateway will need to be rebooted for the change to take effect.

ALEOS Application Framework	CPU Load (last 15 minutes)	0.070000
	ALEOS Application Framework	Enable ▾
	Serial Port Reserved	Disable ▾
	QCOM DM Port Resource Reserve	Disable ▾
	[+] AAF Applications	

3. After the reboot is completed, the AAF Applications section will allow for installing applications.

ALEOS Application Framework	CPU Load (last 15 minutes)	0.100000
	ALEOS Application Framework	Enable ▾
	Serial Port Reserved	Disable ▾
	QCOM DM Port Resource Reserve	Disable ▾
	[-] AAF Applications	

No AAF application installed.

Choose File

No file chosen

Install AAF Application